REMINGTON SOLAR™

Solar Pool Ionizer and Purifier

OPERATING INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

WARNING : To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

WARNING: The sole purpose of this product is for use as a pool water purifier/ionizer as described in this manual; any modification or other use will void the warranty.

WARNING: Do not use if unit is damaged in any way.

WARNING: Unit must be floating in pool water when exposed to sunlight or warranty is void.

WARNING: This unit is not compatible with/in pools where biguanide sanitizer(s) is/are in use. **CAUTION :** If Solar water purifier is not working as it should or has been dropped or damaged in any way ,please contact your dealer .

SAVE THESE INSTRUCTIONS

(you can use this unit with the protective screen or without)

PRELIMINARY ASSEMBLY (WITH THE PROTECTIVE SCREEN)

Anode

Screen and Nylon Screw

Brush

Test strips

PRELIMINARY ASSEMBLY(WITHOUT A SCREEN)

Anode

Brush

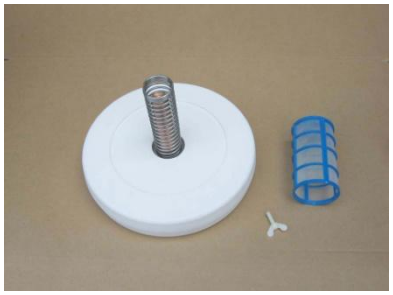
Test strips

Unpack all contents of package – be sure to look inside the insert for parts. Read all instructions before assembling:

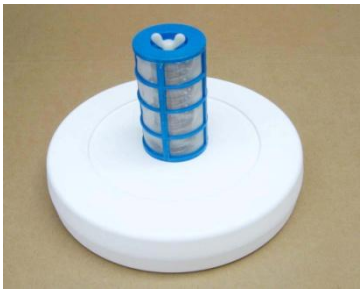
1. Inspect the solar panel for any visual damage or imperfections which may have occurred during shipping. If any discrepancies are noticed, contact your dealer .
2. Lay the unit face down on a smooth surface.
3. With one hand, hold the spring electrode down in a compressed condition to avoid interference.
4. Thread either end of the mineral electrode clockwise onto the silver metal screw stud inside the coil electrode at the center of the unit
5. Tighten snugly by hand, about a quarter turn, after contact with the black rubber seal at the base.

6. Thread the black thumbscrew clockwise into the electrode and tighten snugly. Do not over tighten as the plastic thumbscrew may strip or break.
7. Lay the end-cap/spacer onto end of mineral electrode.
8. Place screen cage over electrodes and line up centered holes with the threaded bore in the mineral electrode end.

Unit with Spring



Unit with Spring and Anode



Unit Assembled (upside-down)

CAUTION

•Make sure the electrode is screwed on tightly. It is recommended not to leave the device in the water for too long of a period. The water will turn cloudy due to too much copper ions has been generated. Use the testing strips to check the Chlorine level.

• The spring electrode is permanently installed and is not removable. Do not attempt removal by twisting or pulling. Permanent damage may result.

• Save your original box and inserts for safe and convenient storage during the off season.

• The screen cage prevents deposits or residues that may form on the electrodes during normal operation from falling into the water.

GETTING STARTED

Solar water purifier protects your pool against microorganisms by transforming your water into biologically healthy and algae-resistant mineral water. Using a safe and effective low power output, your Remington Solar water purifier acts as a trickle charger to generate ions from the sunlight – a process called solar ionization. Depending on the volume of water, weather conditions, and usage, the initialization period will range from about a week to several weeks. Therefore, it is important to maintain a normal sanitizer level during this initialization period until the ion concentration reaches a protective level.

1. Test the water chemistry using your regular chlorine test kit. Maintain a chlorine residual of 1-3 ppm (parts per million) and a pH of 7.2-7.8. The addition of chlorine may be necessary if conditions warrant.

2.Maintain your water's clarity. If your water is less than clear, it may require a 'shock' dose of oxidizer/chlorine.

3. Check for the presence of copper ions in the water with ion test strips (see ION TESTING). The typical reading at this point is zero to trace amount (.0-.0.1). If higher concentrations are detected (usually caused by the previous addition of a copper-based algaecide), follow instructions under ION TESTING until the level drops.

4..Place the Solar Water purifier in the pool and let it free float while ensuring direct sunlight on the unit. If necessary, tether it in a sunny part of the pool. Any suitable restraint may be tied to the tethering chain for this purpose.

5. Operate pump and filter system during daylight hours while Solar Water Purifier is generating ions. This will allow proper mixing and circulation of the minerals. Pump operation at night is unnecessary but optional, and the unit can be left in the pool overnight.

ION TESTING

The mineral electrode is made of a unique alloy of several metals, predominantly copper. Ion test strips will detect the presence of the copper ion, which determines if the water has an adequate level of protective minerals. The reagents in the kit are very sensitive, and readings can be affected by various interferences. Accordingly, use the ion test as a basic and general indicator. Test only once a week; more often is unnecessary.

1. Read ion test strip instructions.
2. Test weekly. It should show an increasing concentration over time. Once the ion reading reaches .0.5, chlorine reduction may begin.
3. If the ion reading climbs to 0.9 or more, remove the unit from the water for a week and monitor the ion level weekly.
4. Once the ion level drops to 0.5 or less, place the unit back in the pool and continue weekly ion checks.
5. If the ion level maintains at 0.5 , continue regular floating schedule.

The purpose of ion testing is to initially determine that it's safe to reduce chlorine, and subsequently to establish a Solar water purifier schedule which results in a steady ion reading of approximately 0.5. Depending on conditions, pools with 20,000 gallons or more usually require full-time use of the Solar water purifier. Smaller pools will usually maintain an adequate ion level with part-time use. For example, one day in, one day out, two days in, one day out, one week in, one week out, etc.Pools with screened enclosures will probably require full-time use of the Solar Water Purifier, as the output will be about half of that with normal full sun.

THE FIRST FEW WEEKS

During this period, you should see the ion level increase to approximately 0.5. Use the Solar water purifier daily and do not reduce the floating time unless the ion level tends to climb too high. Remember, more ions are not better. Water has a capacity to hold only a certain amount of minerals, and attempting to exceed the saturation point may result in minerals collecting on pool surfaces. It is important to spend a few minutes each week to check the ion level and to keep the electrodes clean (see 'ELECTRODE CLEANING').

1. Upon reaching the recommended ion level of 0.5, initiate chlorine reduction by allowing the chlorine concentration to drop to about half of

its normal level, or approximately .0.9.

2. .The pH may now be in the range of 7.2-7.8. The Solar water purifier works well at higher pH values, so do not arbitrarily attempt to adjust the pH if it is within this recommended range. In general, use your Solar water purifier just enough to maintain an adequate ion level, and to determine how little chlorine is necessary to keep the water clear. Allow the water to settle down and seek its own balanced condition .
3. Clean electrodes weekly, or as required.

ELECTRODE CLEANING

Solar water purifier is the only purifier that, in addition to generating beneficial mineral ions, collects undesirable minerals such as calcium and iron. This has the effect of softening your water. The sacrificial mineral electrode is designed to slowly erode away, and in the process will form a scale buildup which will require occasional cleaning. Additionally, the spring electrode may form a calcium scale and should also be cleaned. The initial rate of buildup will be quicker in harder water, and will slow as the water becomes progressively softened. It is advantageous to clean them weekly as heavily scaled electrodes will restrict electrical flow and slow the ionization process.

1. Lay unit face down, preferably on grass.
2. Remove thumbscrew, screen and end-cap.
3. Using a garden hose nozzle, blast with water from different directions to knock off loose material and scale.
4. Reduce the water flow and let the water run over the electrodes. Use a cleaning brush to remove the remaining residue.

AND/OR

With water running over the electrodes, slide the spring up and down, while making contact with the center electrode from various directions. The residue will wash away with the water.

The center electrode does not need to be cleaned down to bare metal, although the spring is relatively easy to clean completely. If the majority of the scale is removed, the Solar water purifier will perform as designed. It is not possible to clean the electrodes too much or too often. The cleaner the electrodes, the more efficient the Solar water purifier will be. Occasionally, the screen will require cleaning to ensure a free flow of water and ion exchange. Because the mesh is very fine, deposits can slowly choke the openings in the screen and restrict water flow. To clean the white mesh screen.

1. Hose out loose debris.
2. Immerse screen in a jar of vinegar until visually free of blue/white scale buildup

OR

1. Mix about 1/3 muriatic or hydrochloric acid to 2/3 water in a jar and immerse screen into this mixture. The cleaning process will take a minute or less. Do not expose screen to the acid mix for more than a minute as it could soften the plastic.
2. Rinse screen and reinstall.

NOTES

The diluted acid dip can also be used to clean the electrodes. Place the unit on top of the jar with the electrodes immersed and remove when the bubbling action stops. Do not leave electrodes submerged for more than a few minutes. Rinse and reinstall screen.

ROUTINE MAINTENANCE

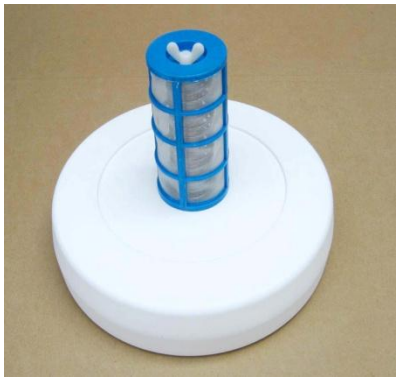
It is important to spend a few minutes a week to monitor the water balance, clean the unit and to learn the trends. After a couple of months of experience, you should have a good idea about how little chlorine or oxidizer is required, how much floating time is required, the best way and frequency to clean the electrodes, etc.

The Solar water purifier works well with trace chlorine or any other oxidizer of your choice. Algaecides, conditioners, clarifiers, etc. are unnecessary. Higher chlorine levels may be required with an increase in water temperature, increased swimmer load, rainfall, or new water added. If using liquid chlorine, add at or after sundown because the sun's rays quickly neutralize chlorine. The recommended levels are not absolute and may vary with changing water conditions. What works best for your pool is determined by experience. Allow your water to seek its own balance. Do not arbitrarily alter the pH or try to change perfectly clear water. Give your pool water time to stabilize, and remember: More is not necessarily better, SIMPLICITY IS THE KEY!

ELECTRODE REPLACEMENT

The mineral electrode is designed to slowly disintegrate. After an average of 12-24 months, depending on conditions, the electrode will wear away and require replacement. You will know this when it is 'pencil thin' or about ¼ inch at its thinnest point. To remove the spent electrode.

1. Remove screen and end-cap, and clean parts
2. While compressing spring electrode with one hand, rotate center electrode counterclockwise. If necessary, use pliers for leverage
3. Continue to unthread until free.



The procedure for installing the electrode is in reverse order, and can be found under 'INITIAL ASSEMBLY'

NOTE

Always keep the same end of the electrode to the floater. Do not swap ends when removing and replacing your electrode.

CLOSING/REOPENING

Whether closing for the winter or for vacation, your pool water should remain clear for months if you prepare the pool correctly:

Unit Assembled(upside-down)

1. Maintain an ion reading of 0.5 to 0.9. The mineralized water will protect against algae. The ions act as an algaecide so there's no need to add additional algaecide
2. Turn off all equipment, including pumps, chlorinators, etc.
3. If the water is clear, no need to oxidize. If less than clear, add chlorine/oxidizer.
4. Remove the Solar water purifier.
5. Drain water, winterize pumps, cover, etc. as desired.

6. Clean and remove electrode from the unit and store in an airtight plastic bag or jar.
7. Store your Solar water purifier indoors. Avoid freezing.

If the pool was shut down with an insufficient ion level, or severe conditions were encountered late in the off season, less than clear water conditions may be experienced. Upon opening:

1. Top off water level, backwash, and vacuum as necessary.
2. Add chlorine to clear any cloudiness, if present.
3. Test ion level. Float unit to reestablish 0.5.
4. If ion level is below 0.5, temporarily increase chlorine for protection.
5. Maintain enough oxidizer to ensure water clarity.
6. Verify pH is within 1.5-1.7 range. Correct if necessary.

OPERATIONAL CHECK

It is highly unlikely that your Solar water purifier will not generate ions. Should there be any doubt, the following quick check will visually prove electrical generation:

1. Fill a clear glass or plastic quart-sized jar or equivalent with pool or tap water.
2. Clean electrodes and leave screen off.
3. Place the Solar water purifier on the top of the jar, resting on the lip, with the electrodes immersed in the water.
4. With a full sun shining on the solar panel, very fine bubbles will be observed after a few seconds originating from the spring coils. This demonstrates that electrical current is being generated. Absence of bubbles indicates a problem.

HELPFUL HINTS

1. Used cleaning acid may be poured back into pool.
2. Allow new plaster type finishes to cure for a month prior to using the Solar water purifier.
3. Baking soda works well to raise pH and is readily available and reasonably priced.
4. Household bleach works excellently for small and medium sized pools. For large pools, too many gallons may be required, making more concentrated forms of chlorine more convenient.
5. Keep a tablet of chlorine in the skimmer or floating dispenser to provide a constant input of oxidizer into the pool. When necessary, add an additional boost of liquid or granulated chlorine to maintain clear water.
6. A toothbrush helps in electrode and screen cleaning.
7. A cutoff golf tee can be used to secure the screen if the thumbscrew is lost.
8. Store chlorine in a cool and dark place.
9. Keep ion test kit in refrigerator.
10. Check water hardness, measured as total dissolved solids (TDS) at your local pool store. Readings of approximately 2000 ppm or greater indicate the need to drain and refill with fresh water. If that is not possible, partial draining and refilling is beneficial. With a high TDS, the water cannot absorb and retain minerals very easily.
11. The addition of cyanuric acid (stabilizer) is not necessary if you already use a stabilized form of chlorine, such as tablets.
12. The Solar water purifier works well with a pool cover. You may open the cover enough to float the unit; or cut a 3-inch "X" into the cover, which allows the electrodes to remain in the water while the top is exposed to the sun.
13. Clear, high quality water without algae and an abnormally low ion reading does not necessarily indicate that your Solar water purifier is not

functioning properly. If this occurs, contact Customer Service.

14. When replacing the mineral electrode, ensure that the threads are dry and free of water.
15. In hard water conditions, over time, the solar panel may form calcium deposits which are left by water evaporation. To quickly and easily remove the scale, apply diluted acid/water (as described under 'ELECTRODE CLEANING') with a toothbrush. Allow deposits to dissolve then rinse. Vinegar may be used, although more time will be required to do the job.

DO'S AND DON'TS

1. Do not automatically take advice for granted from those who are not experienced with the Solar water purifier.This type of expert opinion is often influenced by the desire to sell or use chlorine and related pool chemicals. Additionally, recommendations often reflect a chlorine-based pool chemistry and are not applicable to ionized water.
2. Do not add any clarifiers or metal removers, which will eliminate the beneficial mineral ions generated by your Solar water purifier.
3. Do not use with Baquacil or Soft Swim brand products, or other products with similar "biguanide" chemistry. These chemicals must be removed from the water first.
4. The addition of algaecide is unnecessary as it is an algaecide generator.
5. Do not shock ionized mineral water. It's like an atomic bomb to the water. The water should be finessed. Oxidizer should be added at reduced dosages to clarify cloudy water.